

CLAIMS

1. An aluminum alloy hollow material characterized in that the material is manufactured by subjecting an
5 aluminum alloy ingot containing at least 0.3~1.5 wt% Mn to port hole extrusion or to port hole extrusion followed by drawing-elongation processing, wherein a difference in electric conductivity of individual portions in lengthwise direction of the hollow material is not more than 1.0
10 IACS%.

2. A process for producing an aluminum alloy hollow material as set forth in claim 1, wherein an aluminum alloy ingot containing at least 0.3~1.5 wt% Mn is
15 subjected to a homogenizing treatment and thereafter the ingot is subjected to port hole extrusion or port hole extrusion followed by drawing-elongation processing to produce a hollow material, in which the aforesaid homogenizing treatment is carried out by maintaining the
20 ingot at a given temperature of 500~630 °C for 0~24 hours, thereafter cooling the ingot down to 400~500 °C at a cooling velocity of not more than 100 °C/hr, and maintaining the ingot at this temperature for 4~48 hours.

25 3. A process for producing an aluminum alloy hollow

material as set forth in claim 1, wherein an aluminum alloy ingot containing at least 0.3~1.5 wt% Mn is subjected to a homogenizing treatment and thereafter the ingot is subjected to port hole extrusion or port hole extrusion followed by drawing-elongation processing to produce a hollow material, in which the aforesaid homogenizing treatment of the ingot is carried out by maintaining the ingot at a given temperature (T_1) of 500~630 °C for 0~16 hrs, thereafter cooling the ingot from the temperature T_1 to 350 °C (T_2) at a cooling velocity of not more than 100°C/hr, whereby the time from after achieving to the temperature T_1 to becoming the temperature T_2 is maintained within 10~48 hrs, and cooling the ingot at an optional cooling velocity from the temperature T_2 to room temperature.

4. A process for producing an aluminum alloy hollow material as set forth in claim 1, wherein an aluminum alloy ingot containing at least 0.3~1.5 wt% Mn is subjected to a homogenizing treatment and thereafter the ingot is subjected to port hole extrusion or port hole extrusion followed by drawing-elongation processing to produce a hollow material, in which the aforesaid homogenizing treatment is carried out by maintaining the ingot at a given temperature of 400~500 °C for 12~48 hours,

and thereafter cooling the ingot down to room temperature.

5 5. A process for producing an aluminum alloy hollow material as set forth in claim 1, wherein an aluminum
10 alloy ingot containing at least 0.3-1.5 wt% Mn is subjected to a homogenizing treatment and thereafter the ingot is subjected to port hole extrusion or port hole extrusion followed by drawing-elongation processing to produce a hollow material, in which the aforesaid
15 homogenizing treatment of the ingot is carried out by maintaining the ingot at a given temperature of 400-500 °C for 0.5-4 hours, thereafter elevating the temperature up to an another given temperature of 550-630 °C, maintaining the temperature for 0.5-4 hrs., thereafter cooling the
20 ingot to 350 °C at a cooling velocity of not more than 100 °C/hr, and cooling the ingot from 350 °C to room temperature at an optional cooling rate.

25 6. An aluminum alloy extruded pipe material for air conditioner piping characterized in that an aluminum alloy ingot consisting of 0.8-1.5 wt% Mn, 0.1-0.7 wt% Fe, 0.03-0.6 wt% Si, and 1 or at least 2 of 0.00-0.45 wt% Cu, 0.0-0.3 wt% Mg, 0.0-0.3 wt% Cr, 0.0-0.1 wt% Ti, 0.0-0.5 wt% Zn, 0.0-0.3 wt% Zr, and 0.0-0.3 wt% Ni, the balance
30 being aluminum, and any unavoidable impurities is

subjected to port hole type continuous hot extrusion, wherein an electric conductivity of the aforesaid pipe material is at least 39.0 IACS% and a difference in electric conductivity of individual portions in lengthwise
5 direction of the extruded pipe material is not more than 1.0 IACS%.

7. A process for producing an aluminum alloy extruded pipe material for air conditioner piping wherein
10 an aluminum alloy ingot consisting of 0.8-1.5 wt% Mn, 0.1-0.7 wt% Fe, 0.03-0.6 wt% Si, and 1 or at least 2 of 0.00-0.45 wt% Cu, 0.0-0.3 wt% Mg, 0.0-0.3 wt% Cr, 0.0-0.1 wt% Ti, 0.0-0.5 wt% Zn, 0.0-0.3 wt% Zr, and 0.0-0.3 wt% Ni, the balance being aluminum, and any unavoidable impurities
15 is subjected to a homogenizing treatment and thereafter the ingot is subjected to port hole type continuous hot extrusion method to extrude a pipe material, in which the aforesaid homogenizing treatment of the ingot is carried out by maintaining the ingot at a given temperature of
20 500-630 °C for 0-24 hrs, thereafter cooling the ingot down to an another given temperature of 400-500 °C at a cooling velocity of not more than 100 °C/hr, and maintaining the ingot at this temperature for 4-48 hrs.

25 8. A process for producing an aluminum alloy

extruded pipe material for air conditioner piping wherein an aluminum alloy ingot consisting of 0.8-1.5 wt% Mn, 0.1-0.7 wt% Fe, 0.03-0.6 wt% Si, and 1 or at least 2 of 0.00-0.45 wt% Cu, 0.0-0.3 wt% Mg, 0.0-0.3 wt% Cr, 0.0-0.1 wt% Ti, 0.0-0.5 wt% Zn, 0.0-0.3 wt% Zr, and 0.0-0.3 wt% Ni, the balance being aluminum, and any unavoidable impurities is subjected to a homogenizing treatment and the ingot is subjected to port hole type continuous hot extrusion method to extrude a pipe material, in which the aforesaid homogenizing treatment of the ingot is carried out by maintaining the ingot at a given temperature (T_1) of 500-630 °C for 0-48 hrs, thereafter cooling the ingot from the temperature T_1 to 350 °C (T_2) at a cooling velocity of not more than 100 °C/hr, whereby the time from after achieving the temperature T_1 to becoming the temperature T_2 is maintained within 12-48 hours, and cooling the ingot at an optional cooling velocity from the temperature T_2 to room temperature.

9. A process for producing an aluminum alloy extruded pipe material for air conditioner piping wherein an aluminum alloy ingot consisting of 0.8-1.5 wt% Mn, 0.1-0.7 wt% Fe, 0.03-0.6 wt% Si, and 1 or at least 2 of 0.00-0.45 wt% Cu, 0.0-0.3 wt% Mg, 0.0-0.3 wt% Cr, 0.0-0.1 wt% Ti, 0.0-0.5 wt% Zn, 0.0-0.3 wt% Zr, and 0.0-0.3 wt% Ni,

the balance being aluminum, and any unavoidable impurities is subjected to a homogenizing treatment and the ingot is subjected to port hole type continuous hot extrusion method to extrude a pipe material, in which the aforesaid
5 homogenizing treatment of the ingot is carried out by maintaining the ingot at a given temperature of 400-500 °C for 12-48 hrs, and thereafter cooling the ingot down to room temperature.

10 10. A process for producing an aluminum alloy extruded pipe material for air conditioner piping wherein an aluminum alloy ingot consisting of 0.8-1.5 wt% Mn, 0.1-0.7 wt% Fe, 0.03-0.6 wt% Si, and 1 or at least 2 of 0.00-0.45 wt% Cu, 0.0-0.3 wt% Mg, 0.0-0.3 wt% Cr, 0.0-0.1
15 wt% Ti, 0.0-0.5 wt% Zn, 0.0-0.3 wt% Zr, and 0.0-0.3 wt% Ni, the balance being aluminum, and any unavoidable impurities is subjected to a homogenizing treatment and the ingot is subjected to port hole type continuous hot extrusion method to extrude a pipe material, in which the aforesaid
20 homogenizing treatment of the ingot is carried out by maintaining the ingot at a given temperature of 400-500 °C for 0.5-4 hours, thereafter elevating the temperature up to an another given temperature of 550-630 °C, maintaining the temperature for 0.5-4 hrs., thereafter cooling the
25 ingot to 350 °C at a cooling velocity of not more than 100

°C/hr, and cooling the ingot from 350 °C to room temperature at an optional cooling velocity.

10.0
9.0
8.0
7.0
6.0
5.0
4.0
3.0
2.0
1.0
0.0
-1.0
-2.0
-3.0
-4.0
-5.0
-6.0
-7.0
-8.0
-9.0
-10.0